

**REMARKS****Allowable Subject Matter**

The Examiner's indication that claims 8 and 18 define allowable subject matter and would be allowable if rewritten in independent form is acknowledged with appreciation.

For the reasons below, all of the independent claims in the application and, hence, the claims depending therefrom, are novel and patentable. Therefore, the Applicant has not at this time rewritten claims 8 and 18 in independent form, but respectfully reserves the right to do so at a later time during prosecution if necessary.

**Rejection Of Claims 1, 2, 5, 7, 9-12, 15, 17, 19-25 Under § 102**

Each of Applicant's independent Claims 1 and 22 were rejected under 35 USC § 102(b) as being anticipated by or lacking novelty in view of Mueller '376, Andre, and Mueller '284. Also, each of Applicant's independent claims 11 and 21 were additionally rejected under 35 USC § 102(b) as being anticipated by or lacking novelty in view of the Mueller '376 and Andre references. Additionally, Applicant's independent claim 21 was rejected under 35 USC § 102(b) as being anticipated by or lacking novelty in view of Buck.

Each of amended independent claims 1, 11, 21, and 22 define both novel and patentable subject matter over Mueller '376, Andre, Mueller '284, and Buck for the following reasons.

### The References

The Mueller '376 reference discloses a chuck C, which includes a ring 13 bolted to a base 12. A resilient inflatable bladder ring 45 is carried by an annular bladder ring support 44 mounted atop the ring 13. A fluid chamber 44b is defined between the bladder ring 45 and bladder ring support 44. **Note that the fluid chamber 44b is not defined between the bladder ring 45 and the base 12.** An outboard collet 22 is bolted to a piston 21, which is positioned in a cylinder 20 defined by the base 12 and ring 13. Finally, a cover ring 48 is bolted to the ring 13. **Note the bladder ring 45 does not have an annular flange portion attached to any portion of the base 12, and certainly not for the purpose of resisting rotation of the ring 45 relative to the base 12.**

The Andre reference discloses a main body 30 carrying an annular retainer 70, which in turn carries a polymeric ring 26, wherein a fluid chamber 18 is defined therebetween. **Note that the fluid chamber 18 is not defined between the ring 26 and the body 30.** A tubular metal sleeve 14 is carried on the ring 26 and includes tabs 62 received in slots 64 of a stop ring 50 to drive the sleeve 14. **Note the ring 26 does not have an annular flange portion attached to any portion of the body 30, and certainly not for the purpose of resisting rotation of the ring 26 relative to the body 30.**

The Mueller '284 reference discloses a chuck apparatus 10 having a chuck body 20 including a base 22 and an annular chucking module 34. An expansible bladder ring 82 is mounted on a bladder retainer 78, which is bolted to the chuck body 20. An annular distribution groove 116 is defined between the ring 82 and the retainer 78. **Note that the distribution groove 116 is not defined between the ring 82 and the body 20. Note also that the ring 82 does not have an annular flange portion attached to any portion**

**of the body 20, and certainly not for the purpose of resisting rotation of the ring 82 relative to the body 20**

The Buck references discloses a collet chuck assembly 30 including a housing 11 for attachment to a machine tool, an activating sleeve 15 disposed in the housing 11 and having annular threads on a rearward end for connection to an actuator 26 of the machine tool. The assembly 30 also includes a collet 31 disposed in the sleeve 15 and including elastomeric segments 35, and metal blades 36 between the segments 35 with end portions 39 projecting beyond the segments 35. **Note that the end portions 39 do not engage anything, and not a diaphragm and certainly not for the purpose of resisting relative rotation of the collet 31.**

#### **Amended Claims 1 and 22**

As amended, claims 1 and 22 recite, *inter alia*, at least one drive member carried by a body, wherein a fluid chamber is at least partially defined therebetween and wherein the drive member includes a portion that is radially displaceable. Amended claims 1 and 22 also recite, *inter alia*, that the at least one drive member has an annular flange portion axially abutting and attached to at least a portion of the body to resist rotation of the drive member relative to the body. Amended claims 1 and 22 further recite, *inter alia*, at least one driven member is carried by the body and has at least one displacement relief therein.

The cited references fail to disclose an annular flange portion of a drive member axially abutting and **attached** to the body to resist rotation of the drive member relative to the body. Rather, the Mueller '376 reference discloses that a bladder ring 45 is merely mounted on the retainer 44, which includes beads 44a for securely mounting and sealing

the complementary configured, annular return lips 45a of the ring 45. But a review of the Mueller '376 reference reveals that the return lips 45a are not attached to the retainer 44, and certainly not for the purpose of resisting rotation of the ring 45 relative to the base 12. In fact, the ring 45 can rotate relative to the retainer 44 or base 12, precisely because the ring 45 is not attached thereto.

Similarly, the Mueller '284 reference discloses a bladder ring 82 mounted on a retainer 78, which includes flanges 86, 88 to capture distal ends 84 of the ring 82. But a review of the Mueller '284 reference reveals that the distal ends 84 are not attached to the flanges 86, 88, and certainly not for the purpose of resisting rotation of the ring 82 relative to the base 22. In fact, the ring 82 can rotate relative to the retainer 78 or base 22, precisely because the ring 82 is not attached thereto.

Likewise, the Andre reference discloses a ring 26 having opposed flanges 72, which in assembly engage shoulders 74 of a retainer 70. But a review of the Andre reference reveals that the flanges 72 are not attached to the shoulders 74 of the retainer, and certainly not for the purpose of resisting rotation of the ring 26 relative to the body 30. In fact, the ring 26 can rotate relative to the retainer 70 or body 30, precisely because the ring 26 is not attached thereto.

Applicant notes that the Office Action fails to specifically identify any disclosure in any of the references of a drive member annular flange attached to a body, and none is apparent. At best, the cited references disclose lips 45a, flanges 72, or flanges 86, 88, which are merely mounted and sealed, engaged, or captured by a ring support 44, retainer 70, or retainer ring 78. But the mounting and sealing, engaging, or capturing action does not amount to attachment as claimed by Applicant. The term "attach" means to fasten on

or affix to; connect or join.<sup>1</sup> The Applicant's specification discloses using screws 50 as one example of attaching a flange to a body and, thus, does not indicate that the term is being used more broadly than its dictionary definition.

Further, in the response to arguments section of the Office Action of November 4, 2006, it is generally asserted that Applicant's claimed "body" could be considered to include several different components and that Applicant's claimed "drive member" could be considered to include "any" component carried by the body. For example, it is asserted that the body 22 in Mueller '284 can also include components "shown near" the adaptor plate 24 or the retainer 78, and that the drive member can include the bladder ring 82 and also the dowels 120 and the retainer 78.

Applicant respectfully submits that such a construction is technically and legally incorrect, and points out that the words of a claim must not be interpreted in the abstract, but must be given their "plain meaning" in the context of the written description and as customarily understood by those skilled in the relevant art.<sup>2</sup> Those of ordinary skill in the art would not be confused by Applicant's claim term – body. In fact, the PTO's own Class Definition for Class 279 uses the term "chuck body" or "body" no less than fifteen times.<sup>3</sup> Applicant notes that his term "body" is not limited to chucks and may also include arbors.

Nonetheless, Applicant has amended the claims to clarify that the drive member has a portion that is radially displaceable. Clearly, the dowels 120 and the retainer 78 of

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<sup>1</sup> See *Ex Parte McCarthy*, 2004 WL 697002 (BPAI 2004) (a seal flange is not affixed to an annular cover by spring force, because pressing action of a spring does not fasten, connect or join the annular cover and the flange.) attached hereto.

<sup>2</sup> See MPEP 2111.01 - Ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art.

<sup>3</sup> See <http://www.uspto.gov/go/classification/uspc279/defs279.htm>. For example, "[a] device wherein the gripping means is separate from the chuck body..." (Spring Biased Jaws 229/46.1).

Mueller '284 do not include radially displaceable portions. Thus, the cited references do not disclose each and every element as claimed in Applicant's claims.

The specific construction and arrangement of Applicant's claims 1 and 22 has the significant practical advantages of providing a workholding apparatus that resists relative rotation under high torsional loads such as those due to high cutting tool forces. Neither this specific construction and arrangement nor its significant practical advantages are disclosed, suggested or taught to skilled persons by the Mueller '376, Andre, and Mueller '284 references whether considered alone or in combination. Accordingly, claims 1 and 22 define novel and patentable subject matter and are allowable for at least these reasons.

#### **Amended Claim 11**

Amended claim 11 recites, *inter alia*, at least one diaphragm carried by a body, wherein a fluid chamber is at least partially defined therebetween and wherein the diaphragm has a portion that is radially displaceable. Amended claim 11 also recites, *inter alia*, that the at least one diaphragm has an annular flange portion axially abutting and attached to at least a portion of the body to resist rotation of the diaphragm relative to the body. Amended claim 11 further recites, *inter alia*, at least one collet is carried by the body and has at least one displacement relief therein.

The cited references fail to disclose an annular flange portion of a diaphragm axially abutting and **attached** to the body to resist rotation of the diaphragm relative to the body. Rather, the Mueller '376 reference discloses that a bladder ring 45 is merely mounted on the retainer 44, which includes beads 44a for securely mounting and sealing the complementary configured, annular return lips 45a of the ring 45. But a review of the

Mueller '376 reference reveals that the return lips 45a are not attached to the retainer 44, and certainly not for the purpose of resisting rotation of the ring 45 relative to the base 12. In fact, the ring 45 can rotate relative to the retainer 44 or base 12, precisely because the ring 45 is not attached thereto. Thus, the Mueller '376 device suffers from the problem identified and solved by Applicant.

Similarly, the Mueller '284 reference discloses a bladder ring 82 mounted on a retainer 78, which includes flanges 86, 88 to capture distal ends 84 of the ring 82. But a review of the Mueller '284 reference reveals that the distal ends 84 are not attached to the flanges 86, 88, and certainly not for the purpose of resisting rotation of the ring 82. In fact, the ring 82 can rotate relative to the retainer 78 or base 22, precisely because the ring 82 is not attached thereto. Thus, the Mueller '284 device suffers from the problem identified and solved by Applicant.

Likewise, the Andre reference discloses a ring 26 having opposed flanges 72, which in assembly engage shoulders 74 of a retainer 70. But a review of the Andre reference reveals that the flanges 72 are not attached to the shoulders 74 of the retainer. In fact, the ring 26 can rotate relative with respect to the retainer 70 or body 30, precisely because the ring 26 is not attached thereto. Thus, the Andre device suffers from the problem identified and solved by Applicant.

Further, Applicant notes that the Office Action only generally refers to the drawing figures of the cited references' and fails to specifically identify how an annular flange portion in the cited references axially abuts and attaches to the body.

The specific construction and arrangement of Applicant's claim 11 has the significant practical advantages of providing a workholding apparatus that resists relative

rotation under high torsional loads such as those due to high cutting tool forces. Neither this specific construction and arrangement nor its significant practical advantages are disclosed, suggested or taught to skilled persons by the Mueller '376, Andre, and Mueller '284 references whether considered alone or in combination. Accordingly, claim 11 defines novel and patentable subject matter and is allowable for at least these reasons.

#### **Amended Claim 21**

Amended claim 21 recites, *inter alia*, a collet used in conjunction with a workholding apparatus including a diaphragm, wherein the collet has interengagement elements projecting therefrom and engaging the diaphragm to resist relative rotation of the collet.

Although the Andre reference discloses a tubular metal sleeve including tabs received in slots of a *stop ring* to drive the sleeve, the Andre reference fails to disclose a collet having interengagement elements engaging a *diaphragm*.

The Mueller '376 reference discloses that a stop ring 48 bolted to a sidewall 13 has a flange 48a with a radial stop surface 48b to limit inward pivoting of fingers 22c, 22d of an outboard collet 22. But Mueller '376 does not disclose that the collet 22 itself has interengagement elements that engage the diaphragm 45 to resist relative rotation of the collet 22. Accordingly, Mueller '376 fails to disclose a collet having interengagement elements, and certainly not for engaging a *diaphragm*.

In the response to arguments section of the Office Action, it is asserted that a stop ring is a diaphragm. But those of ordinary skill in the art would not confuse these two structurally and functionally different components. Nonetheless, Applicant has amended



claim 21 to recite the diaphragm having a portion that is radially displaceable. Clearly, the stop rings of Andre and Mueller '376 are not diaphragms, and certainly do not have radially displaceable portions.

The Buck reference discloses a collet 31 including elastomeric segments 35, and metal blades 36 between the segments 35 and having end portions 39 projecting beyond the segments 35. But Buck does not disclose that the end portions 39 are interengagement elements that engage anything, and certainly not a diaphragm and even less for the purpose of resisting relative rotation of the collet 31. Thus, Buck fails to disclose a collet having interengagement elements, and certainly not for engaging a *diaphragm*.

The specific construction and arrangement of Applicant's claim 21 has the significant practical advantages of providing a workholding apparatus that resists relative rotation of a collet under high torsional loads such as those due to high cutting tool forces. Neither this specific construction and arrangement nor its significant practical advantages are disclosed, suggested or taught to skilled persons by the Mueller '376, Andre, and Buck references whether considered alone or in combination. Accordingly, claim 21 defines novel and patentable subject matter and is allowable for at least these reasons.

#### **Independent Claims 1, 11, 21 and 22**

In view of the discussion above regarding independent claims 1, 11, 21, and 22, each of these claims defines novel subject matter, which is not anticipated by the Mueller '376, Andre, Mueller '284, and Buck references and also defines patentable subject matter over these references, individually or in any combination, for at least the foregoing

reasons. Accordingly, reconsideration and allowance of each of independent claims 1, 11, 21, and 22 is requested.

### **Dependent Claims**

Each of the dependent claims 2, 7, 9, 12, 17, 19, 20, and 23, which were rejected as being anticipated, is ultimately dependent on one of independent claims 1, 11, 21, and 22 and, hence, each defines novel and patentable subject matter over the cited references for at least the foregoing reasons.

### **Rejection Of Claims 3-4, 6, 13-14, and 16 Under § 103**

Applicant's dependent claims 6 and 16 were rejected under 35 USC § 103 as being unpatentable over Mueller '376 in view of Buck, Mueller '284 in view of Buck, and over Andre in view of Buck. Also, Applicant's dependent claims 3-4 and 13-14 were rejected under 35 USC § 103 as being unpatentable over Mueller '376.

Applicant's claims 3-4, 6, 13-14, and 16 all recite, *inter alia*, at least one drive member carried by a body, wherein a fluid chamber is at least partially defined therebetween and wherein the at least one drive member has an annular flange portion axially abutting and attached to at least a portion of the body to resist rotation of the drive member relative to the body. The cited references disclose various devices which neither recognize the problems confronted and solved by Applicant's invention, nor disclose, teach, or suggest any solution at all to these problems, and certainly not Applicants' solution embodied in claims 3-4, 6, 13-14, and 16.

At least for the reasons discussed above with respect to independent claim 1 and 11, the cited references fail to disclose a body carrying a drive member having an annular flange portion that axially abuts and attaches to the body, and certainly not for the purpose of resisting rotation of the drive member relative to the body. In fact, rotation of a drive member relative to a body is a problem identified only by Applicant's and not by any of the cited references. Absent a recognition of this problem, it would be impossible for its solution to be obvious to anyone, and the cited references cannot possibly suggest, singularly or in combination, a solution as novel as Applicant's invention.

Additionally, claims 6 and 16 recite drive and driven members splined together to resist rotation therebetween. Contrary to the assertion in the Office Action, Buck teaches nothing whatsoever about splined connections and, in fact, a text search of the Buck references reveals not a single mention of the word spline. And as stated previously, Buck does not disclose that the end portions 39 are interengagement elements that engage anything, and certainly not for the purpose of resisting relative rotation. Thus, Buck fails to disclose drive and driven members splined together to resist relative rotation therebetween.

Moreover, claims 3-4 and 13-14 recite a drive pin extending radially through a portion of a driven member and a portion of a drive member to resist relative rotation therebetween. While the Mueller '376 reference may teach use of dowel pins, it does not specifically disclose a drive pin extending radially through a portion of a driven member and a portion of a drive member, and certainly not for the purpose of resisting relative rotation therebetween.

Neither Applicants' specific construction and arrangement nor its significant practical advantages are disclosed, suggested or taught to skilled persons by the cited references whether considered alone or in combination. Accordingly, claims 3-4, 6, 13-14, and 16 define novel and patentable subject matter and are allowable for at least these additional reasons. Therefore, reconsideration and allowance of each of claims 3-4, 6, 13-14, and 16 is requested.

#### **Entry of Amendments for Appeal**

Pursuant to Rule 116(b) and MPEP § 714.12, it is also requested that the foregoing amendments be entered at least for the purposes of any necessary appeal because they narrow, sharpen and more clearly define the issues for appeal.

#### **Conclusion**

Each of the independent claims and hence all of the claims 1-25 are believed to define novel and nonobvious patentable subject matter and to be in a condition for allowance for at least the foregoing reasons. Accordingly, reconsideration and allowance of all the claims 1-25 as amended is requested.

If, after considering this Response, the Examiner is of the view that any of the claims are not allowable, a telephone interview with Applicant's undersigned attorney Steve Walmsley is requested so that immediate consideration can be given to any further amendments suggested by the Examiner or otherwise needed to place all of the claims in a condition for allowance. The Examiner is asked to initiate an interview by telephoning

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Steve Walmsley who normally can be reached at (248) 689-3500 Monday through Friday between 9:00 A.M. and 5:00 P.M.

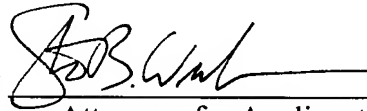
It is hereby authorized and respectfully requested that any deficiency in fees be charged to our Deposit Account No. 50-0852.

Respectfully submitted,

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WHF/SBW

By



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